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“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 8271-3-6 (1982): Quartz Crystal Units Used in
Oscillators, Part 3: Series BC, Section 6: Quartz Crystal
Unit Type BC-06 [LITD 5: Semiconductor and Other Electronic
Components and Devices]

“ज्ञान से एक नये भारत का निर्माण”

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Bhartṛhari—Nītiśatakam

“Knowledge is such a treasure which cannot be stolen”



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Indian Standard

**SPECIFICATION FOR
QUARTZ CRYSTAL UNITS USED IN OSCILLATORS
PART III SERIES BC**

Section 6 Quartz Crystal Unit Type BC-06

0. General — This standard shall be read in conjunction with IS : 8271 (Part I)-1981 Specification for quartz crystal units used for frequency control and selection: Part I General requirements and tests (*first revision*).

1. Outline and Dimensions — Holder outline shall conform to Type BC (*see sheet 5 of IS : 4570-1968 Specification for crystal holders*).

2. Marking — *See 8 of IS : 8271 (Part I)-1981.*

3. Material, Construction and Workmanship — *See 7 of IS : 8271 (Part I)-1981.*

4. Test Schedule and Detail Requirements

4.1 General Conditions for Test — *See 9.2 of IS : 8271 (Part I)-1981.*

4.2 Test Schedule — The sequence and grouping of type, routine and acceptance tests shall be in accordance with 9.1 of IS : 8271 (Part I)-1981.

4.3 Detail Requirements — The detail requirements applicable to this particular type of crystal unit shall be as specified in Table 1.

TABLE 1 DETAIL REQUIREMENTS OF QUARTZ CRYSTAL UNIT TYPE BC-06

Characteristics	Requirement
(1)	(2)
a) Type of holder	BC (<i>see 1</i>)
b) Frequency range	5 to 20 MHz
c) Frequency tolerance :	
i) Room temperature	± 70 ppm
ii) Operating temperature range	± 20 ppm
d) Frequency stability	± 5 ppm
e) Resonance resistance	See Table 2
f) Mode of oscillation	Fundamental
g) Load capacitance	30 ± 0.5 pF
h) Capacitance shunt	7 pF, maximum
j) Reference temperature	75°C ± 1°C
k) Temperature range :	
i) Operating	75°C ± 5°C
ii) Operable	-55°C to + 70°C and + 80°C to + 90°C
m) Test set, calibration values and rated drive level	See Table 3
n) Shock [<i>according to 9.15 (Severity A) of IS : 8271 (Part I)-1981</i>]:	
i) Frequency change permitted	± 5 ppm
ii) Resonance resistance change permitted	± 10 percent
p) Vibration [<i>according to 9.16.1 (Severity A) of IS : 8271 (Part I)-1981</i>]:	
i) Frequency change permitted	± 5 ppm
ii) Resonance resistance change permitted	± 10 percent
q) Temperature cycling :	
i) Frequency change permitted	± 5 ppm
ii) Resonance resistance change permitted	± 10 percent
r) Temperature run :	
i) Frequency change permitted	± 5 ppm
ii) Resonance resistance change permitted	± 10 percent
s) Ageing :	
i) Frequency change permitted	5 ppm

TABLE 2 RESONANCE RESISTANCE

[Table 1 (e)]

Frequency Range		Maximum Resonance Resistance
MHz		Ohms
(1)	(2)	
From 5 to 7		75
Over 7 to 10		45
Over 10 to 15		35
Over 15 to 20		30

TABLE 3 TEST SET, CALIBRATION VALUES AND RATED DRIVE LEVEL

[Table 1 (m)]

Sl No.	Frequency Range	Calibration Values			Rated Drive Level
		Resistance	Crystal Current	Resistor Voltage Drop	
	MHz	Ohms	mA	V	mW
(1)	(2)	(3)	(4)	(5)	(6)
i)	From 5 to 7.5	25	14	—	
ii)	Over 7.5 to 10	16	18	—	
iii)	Over 10 to 15	13	20	—	
iv)	Over 15 to 20	12	—	0.24	5.0 ± 1.0

For Sl No. (i) to (iii) — Test Set TS-330/TSM.

For Sl No. (iv) — Test Set TS-683/TSM.